

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/542,958
Source: IFWP
Date Processed by STIC: 08/11/2006

ENTERED



IFWP

RAW SEQUENCE LISTING

DATE: 08/11/2006

PATENT APPLICATION: US/10/542,958

TIME: 11:01:02

Input Set : A:\96700-1031 - from 862 seq list.ST25.txt

Output Set : N:\CRF4\08112006\J542958.raw

3 <110> APPLICANT: ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY
 4 JACOBS, JR., William R.
 5 HSU, Tsungda
 6 BARDAROV, Stoyan (deceased)
 7 SAMBANDAMURTHY, Vasan
 8 MORRIS, Sheldon
 10 <120> TITLE OF INVENTION: USE OF MYCOBACTERIAL VACCINES IN CD4+ OR CD8+
 11 LYMPHOCYTE-DEFICIENT MAMMALS
 13 <130> FILE REFERENCE: 96700/1031
 C--> 15 <140> CURRENT APPLICATION NUMBER: US/10/542,958
 C--> 16 <141> CURRENT FILING DATE: 2005-07-21
 18 <150> PRIOR APPLICATION NUMBER: US 60/442,631
 19 <151> PRIOR FILING DATE: 2003-01-24
 21 <160> NUMBER OF SEQ ID NOS: 12
 23 <170> SOFTWARE: PatentIn version 3.3
 25 <210> SEQ ID NO: 1
 26 <211> LENGTH: 9454
 27 <212> TYPE: DNA
 28 <213> ORGANISM: Mycobacterium tuberculosis
 30 <400> SEQUENCE: 1
 31 gatcgtgggt gccgccggg ggatgccgcc gatggcaccg ctggccccgt tattgccggc 60
 33 ggcggcagat atcgggttgc acatcattgt cacctgtcag atgagccagg cttacaaggc 120
 35 aaccatggac aagttcgtcg gcgccgcatt cgggtcgggc gctccgacaa tgttcctttc 180
 37 gggcgagaag caggaattcc catccagtga gttcaaggtc aagcggcgcc cccctggcca 240
 39 ggcattttct gtctcgccag acggcaaaga ggtcatccag gccccctaca tcgagcctcc 300
 41 agaagaagtg ttccgcagcac cccaagcgc cggttaagat tatttcattg ccggtgtagc 360
 43 aggacccgag ctccagcccg taatcgagtt cgggcaatgc tgaccatcgg gtttgtttcc 420
 45 ggctataacc gaacggtttg tgtacgggat acaaatacag ggagggaaga agtaggcaaa 480
 47 tggaaaaaat gtcacatgat ccgatcgctg ccgacattgg cacgcaagtg agcgacaacg 540
 49 ctctgcacgg cgtgacggcc ggctcgacgg cgctgacgtc ggtgaccggg ctggttcccg 600
 51 cggggggccga tgaggtctcc gcccaagcgg cgacggcggt caccatcgag ggcattccaat 660
 53 tgctggcttc caatgcatcg gcccaagacc agctccaccg tcggggcgaa gcggtccagg 720
 55 acgtcgcccc cacctattcg caaatcgacg acggcgccgc cggcgtcttc gccgaatagg 780
 57 cccccaacac atcggaggga gtgatcacca tgctgtggca cgcaatgcc aaggagctaa 840
 59 ataccgcacg gctgatggcc ggcgcgggtc cggctccaat gcttgcgggc gccgcgggat 900
 61 ggcagacgct ttccggcggt ctggacgtc aggcgctcga gttgaccgcg cgctgaact 960
 63 ctctgggaga agcctggact ggaggtggca gcgacaaggc gcttgcggt gcaacgccga 1020
 65 ttgtgggtct gctacaaacc gcgtcaacac aggccaaagc ccgtgcatg caggcgacgg 1080
 67 cggaagccgc ggcatacacc caggccatgg ccacgacgcc gtcgctgccg gagatcgccg 1140
 69 ccaaccacat caccaggcc gtccttacgg ccaccaactt cttcggtatc aacacgatcc 1200
 71 cgatcgcggt gaccgagatg gattatttca tccgtatgtg gaaccaggca gccctggcaa 1260
 73 tggaggtcta ccaggccgag accgcggtta acacgctttt cgagaagctc gagccgatgg 1320
 75 cgtcgatcct tgatcccggc gcgagccaga gcacgacgaa cccgatcttc ggaatgccct 1380

RAW SEQUENCE LISTING

DATE: 08/11/2006

PATENT APPLICATION: US/10/542,958

TIME: 11:01:02

Input Set : A:\96700-1031 - from 862 seq list.ST25.txt

Output Set: N:\CRF4\08112006\J542958.raw

| | | | | | | | |
|-----|-------------|-------------|------------|-------------|-------------|-------------|------|
| 77 | cccctggcag | ctcaacaccg | gttggccagt | tgccgcgggc | ggctaccag | accctcggcc | 1440 |
| 79 | aactgggtga | gatgagcggc | ccgatgcagc | agctgacca | gccgctgcag | caggtgacgt | 1500 |
| 81 | cgttggttcag | ccaggtgggc | ggcaccggcg | gcggaaccc | agccgacgag | gaagccgcgc | 1560 |
| 83 | agatgggct | gctcggcacc | agtcgctgt | cgaaccatcc | gctggctggt | ggatcaggcc | 1620 |
| 85 | ccagcgcggg | cgcgggcctg | ctgcgcgcgg | agtcgctacc | tggcgcaggt | gggtcgttga | 1680 |
| 87 | ccgcacgccc | gctgatgtct | cagctgatcg | aaaagccggg | tgccccctcg | gtgatgccgg | 1740 |
| 89 | cggctgctgc | cggatcgtcg | gcgacgggtg | gcgccgctcc | gggtgggtgcg | ggagcgatgg | 1800 |
| 91 | gccagggtgc | gcaatccggc | ggctccacca | ggccgggtct | ggtcgcgcgc | gcaccgctcg | 1860 |
| 93 | cgcaggagcg | tgaagaagac | gacgaggacg | actgggacga | agaggacgac | tgggtgagctc | 1920 |
| 95 | ccgtaatgac | aacagacttc | ccggccaccc | gggcccgaag | acttgccaac | attttggcga | 1980 |
| 97 | ggaaggtaaa | gagagaaagt | agtcacgcat | ggcagagatg | aagaccgatg | ccgctaccct | 2040 |
| 99 | cgcgcaggag | gcaggttaatt | tcgagcggat | ctccggcgac | ctgaaaaccc | agatcgacca | 2100 |
| 101 | gggtggagtgc | acggcaggtt | cgttgccagg | ccagtggcgc | ggcgcggcgc | ggacggccgc | 2160 |
| 103 | ccaggccgcg | gtgggtgcgt | tccaagaagc | agccaataag | cagaagcagg | aactcgacga | 2220 |
| 105 | gatctcgacg | aatattcgct | aggccggcgt | ccaatactcg | agggccgacg | aggagcagca | 2280 |
| 107 | gcaggcgctg | tcttcgcaaa | tgggtctctg | acccgctaata | acgaaaagaa | acggagcaaa | 2340 |
| 109 | aacatgacag | agcagcagtg | gaatttcgcg | ggatctgagg | ccgcggcaag | cgcaatccag | 2400 |
| 111 | ggaaatgtca | cgtccattca | ttccctcctt | gacgagggga | agcagtcctt | gaccaagctc | 2460 |
| 113 | gcagcggcct | ggggcggtag | cggttcggag | gcgtaccagg | gtgtccagca | aaaatgggac | 2520 |
| 115 | gccacggcta | ccgagctgaa | caacgcgctg | cagaacctgg | cgcggacgat | cagcgaagcc | 2580 |
| 117 | ggtcaggcaa | tggcttcgac | cgaaggcaac | gtcactggga | tgttcgcata | gggcaacgcc | 2640 |
| 119 | gagttcgctg | agaatagcga | aacacgggat | cgggcgagtt | cgaccttcgc | tcgggtctgc | 2700 |
| 121 | cctttctcgt | gtttatacgt | ttgagcgcac | tctgagaggt | tgtcatggcg | gccgactacg | 2760 |
| 123 | acaagctctt | ccggccgcac | gaaggatatg | aagctccgga | cgatatggca | gcgcagccgt | 2820 |
| 125 | tcttcgaccc | cagtgtctcg | tttcgcgcgc | cgcccgcatc | ggcaaacctc | ccgaagccca | 2880 |
| 127 | acggccagac | tcggcccccg | acgtccgacg | acctgtcgga | gcgggttcgtg | tcggccccgc | 2940 |
| 129 | cgcggccacc | cccaccccc | cctccgcctc | cgccaaactc | gatgccgatc | gccgcaggag | 3000 |
| 131 | agccggcctc | gccggaaccg | gccgcattca | aaccacccac | accccccatg | cccatcgccg | 3060 |
| 133 | gaccggaacc | ggccccaccc | aaaccaccca | caccccccat | gccccatgcc | ggaccggaac | 3120 |
| 135 | cggccccacc | caaaccaccc | acacctccga | tgccccatgc | cggacctgca | cccaccccaa | 3180 |
| 137 | ccgaatccca | gttggcgccc | cccagaccac | cgacaccaca | aacgccaacc | ggagcgccgc | 3240 |
| 139 | agcaaccgga | atcacggcg | ccccacgtac | cctcgacggg | gccacatcaa | ccccggcgca | 3300 |
| 141 | ccgcaccagc | accgccttgg | gcaaagatgc | caatcggcga | acccccgccc | gctccgtcca | 3360 |
| 143 | gaccgtctgc | gtccccggcc | gaaccaccga | ccgggcctgc | cccccaacac | tcccgacgtg | 3420 |
| 145 | cgcgcggggg | tcaccgctat | cgcacagaca | ccgaacgaaa | cgtcgggaag | gtagcaactg | 3480 |
| 147 | gtccatccat | ccaggcgcgg | ctgcgggcag | aggaagcatc | cggcgcgcag | ctcgcccccg | 3540 |
| 149 | gaacggagcc | ctcgccagcg | ccgttggggc | aaccgagatc | gtatctggct | ccgcccaccc | 3600 |
| 151 | gccccgcgcc | gacagaacct | ccccccagcc | cctcgccgca | gcgcaactcc | ggtcggcggtg | 3660 |
| 153 | ccgagcgacg | cgtccacccc | gatttagccg | cccaacatgc | cgcggcgcaa | cctgattcaa | 3720 |
| 155 | ttacggccgc | aaccactggc | ggtcgtcgcc | gcaagcgtgc | agcgcgggat | ctcgacgcga | 3780 |
| 157 | cacagaaatc | cttaaggccg | gcggccaagg | ggccgaaggt | gaagaaggtg | aagccccaga | 3840 |
| 159 | aaccgaaggc | cacgaagccg | cccaaagtgg | tgtcgcagcg | cggctggcga | cattgggtgc | 3900 |
| 161 | atgcgttgac | gcgaatcaac | ctgggcctgt | caccgcagca | gaagtacgag | ctggacctgc | 3960 |
| 163 | acgtcgcagt | cgcgcgcaat | ccccgcgggt | cgtatcagat | cgcgcgtcgtc | ggtctcaaag | 4020 |
| 165 | gtggggctgg | caaaaccacg | ctgacgacag | cgttgggggtc | gacgttggct | caggtgcggg | 4080 |
| 167 | ccgaccggat | cctgggtcta | gacgcggatc | caggcgcccg | aaacctcgcc | gatcgggtag | 4140 |
| 169 | ggcgacaatc | gggcgcgacc | atcgctgatg | tgcttgacga | aaaagagctg | tcgcactaca | 4200 |
| 171 | acgacatccg | cgcacacact | agcgtcaatg | cgggtcaatct | ggaagtgcgtg | ccggcaccgg | 4260 |
| 173 | aatacagctc | ggcgcagcgc | gcgctcagcg | acgccgactg | gcatttcatc | gccgatcctg | 4320 |

RAW SEQUENCE LISTING

DATE: 08/11/2006

PATENT APPLICATION: US/10/542,958

TIME: 11:01:02

Input Set : A:\96700-1031 - from 862 seq list.ST25.txt

Output Set: N:\CRF4\08112006\J542958.raw

| | | | | | | | |
|-----|-------------|-------------|-------------|------------|-------------|-------------|------|
| 175 | cgctcgaggtt | ttacaacctc | gtctttggctg | attgtggggc | cggtctcttc | gacccgctga | 4380 |
| 177 | cccgcggcgt | gctgtccacg | gtgtccgggtg | tcgtggctgt | ggcaagtgtc | tcaatcgacg | 4440 |
| 179 | gcgcacaaca | ggcgctcggtc | gcgttggact | ggttgcgcaa | caacggttac | caagatttgg | 4500 |
| 181 | cgagccgcgc | atgcgtgggtc | atcaatcaca | tcatgccggg | agaaccaaat | gtcgcagtta | 4560 |
| 183 | aagacctggt | gcggcatttc | gaacagcaag | ttcaaccggg | ccgggtcgtg | gtcatgccgt | 4620 |
| 185 | gggacaggca | cattgcggcc | ggaaccgaga | tttcaactga | cttgctcgac | cctatctaca | 4680 |
| 187 | agcgcaaggt | cctcgaattg | gcccgcgcgc | tatccgacga | tttcgagagg | gctggacgtc | 4740 |
| 189 | gttgagcgca | cctgctgttg | ctgctgggtc | taccgcccgc | ggggcaaccg | ctgcgcggcc | 4800 |
| 191 | tgccaccacc | cggttgacga | tccctgaccg | cagacggatg | accgatttgg | tactgccagc | 4860 |
| 193 | ggcggtgccc | atggaaactt | atattgacga | caccgtcgcg | gtgctttccg | aggtgttggg | 4920 |
| 195 | agacacgccc | gctgatgtac | tcggcggtct | cgactttacc | gcgcaaggcg | tgtgggcgtt | 4980 |
| 197 | cgctcgctcc | ggatcgccgc | cgctgaagct | cgaccagtca | ctcgatgacg | ccggggtggt | 5040 |
| 199 | cgacgggtca | ctgctgactc | tgggtcgagt | cagtcgcacc | gagcgctacc | gaccgttggg | 5100 |
| 201 | cgaggagtgc | atcgacgcga | tcgcccgtgt | tgacgagtca | cctgagttcg | accgcacggc | 5160 |
| 203 | attgaatcgc | tttgtggggg | cgccgatccc | gcttttgacc | gcgcccgtca | tcgggatggc | 5220 |
| 205 | gatgcggggc | tgggtgggaa | ctgggcgtag | cttgtggtgg | ccgttggcga | ttggcatact | 5280 |
| 207 | ggggatcgct | gtgctggtag | gcagcttcgt | cgcgaaacag | ttctaccaga | gcggccaact | 5340 |
| 209 | ggccgagtg | ctactggtca | cgacgtatct | gctgatcgca | accgcccagc | cgctggccgt | 5400 |
| 211 | gccgttgccc | cgcggggtca | actcgttggg | ggcgccacaa | gttgccggcg | ccgtacgggc | 5460 |
| 213 | cgtgctgttt | ttgaccttga | tgacgcgggg | cgccctcggg | aagcgtcatg | agttggcgct | 5520 |
| 215 | gtttgcgcgt | atcaccgcta | tcgcccgtcat | cgcgccgcgc | gctgccttcg | gctatggata | 5580 |
| 217 | ccaggactgg | gtccccgcgc | gggggatcgc | attcgggctg | ttcattgtga | cgaatgcggc | 5640 |
| 219 | caagctgacc | gtcgcgggtc | cgccgatcgc | gctgccgcgc | attccgggtac | ccggcgaaac | 5700 |
| 221 | cgtggacaac | gaggagtgtc | tcgatcccgt | cgcgaccccg | gaggetacca | gcgaagaaac | 5760 |
| 223 | cccgacctgg | caggccatca | tcgcgtcggg | gcccgcgtcc | gcgggtccggc | tcaccgagcg | 5820 |
| 225 | cagcaaaact | gccaagcaac | ttctgatcgg | atacgtcacg | tcgggcaccc | tgattctggc | 5880 |
| 227 | tgccggtgcc | atcgcggtcg | tgggtgcgcg | gcacttcttt | gtacacagcc | tgggtggtcgc | 5940 |
| 229 | gggtttgctc | acgaccgtct | gcggatttcg | ctcgcggtct | tacgccgagc | gctggtgtgc | 6000 |
| 231 | gtgggcgttg | ctggcggcga | cggtcgcgat | tccgacgggt | ctgacggcca | aactcatcat | 6060 |
| 233 | ctgggtaccc | cactatgcct | ggctgttgtt | gagcgtctac | ctcacggtag | ccctggttgc | 6120 |
| 235 | gctcgtggtg | gtcgggtcga | tggctcacgt | ccggcgcggt | tcaccgggtc | taaaacgaac | 6180 |
| 237 | tctggaattg | atcgacggcg | ccatgatcgc | tgccatcatt | cccatgctgc | tgtggatcac | 6240 |
| 239 | cggggtgtac | gacacggtcc | gcaatatccg | gttctgagcc | ggatcggtcg | attggcggtt | 6300 |
| 241 | cctgacagaa | catcgaggac | acggcgccag | tttgcatacc | ttcggcgccc | gacaaattgc | 6360 |
| 243 | tgcgattgag | cgtgtggcgc | gtccggtaaa | atttgctcga | tggggaacac | gtataggaga | 6420 |
| 245 | tccggcaatg | gctgaaccgt | tggccgtcga | tcccaccggc | ttgagcgcag | cgcccgcgaa | 6480 |
| 247 | attggccggc | ctcgtttttc | cgcagcctcc | ggcgccgata | gcggtcagcg | gaacggattc | 6540 |
| 249 | ggtggttagc | gcaatcaacg | agaccatgcc | aagcatcgaa | tcgctggtca | gtgacgggct | 6600 |
| 251 | gcccggcggt | aaagccgccc | tgactcgaac | agcatccaac | atgaacgcgg | cgccggacgt | 6660 |
| 253 | ctatgcgaag | accgatcagt | cactgggaac | cagtttgagc | cagtatgcat | tcggctcgtc | 6720 |
| 255 | gggcgaaggc | ctggctggcg | tcgcctcggg | cggtggtcag | ccaagtccag | ctaccagct | 6780 |
| 257 | gctgagcaca | ccggtgtcac | aggtcacgac | ccagctcggc | gagacggccg | ctgagctggc | 6840 |
| 259 | accccggtgt | gttgcgacgg | tgcgcgaact | cgttcagctg | gctccgcacg | ccgttcagat | 6900 |
| 261 | gtcgcaaaa | gcatccccc | tcgctcagac | gatcagtcga | accgcccac | aggccgcccc | 6960 |
| 263 | gagcgcgac | ggcggcagcg | gcccattgcc | cgcacagctt | gccagcgctg | aaaaaccggc | 7020 |
| 265 | caccgagcaa | gcgagccggg | tccacgaagt | gacaaacgac | gatcaggggc | accaggcgga | 7080 |
| 267 | cgtgcagccg | gcccaggtcg | ttgcccgggc | acgtgacgaa | ggcgccggcg | catcaccggg | 7140 |
| 269 | ccagcagccc | ggcgggggcg | ttcccgcgca | agccatggat | accggagccg | gtgcccgcgc | 7200 |
| 271 | agcggcgagt | ccgctggcgg | cccccgctga | tccgtcgact | ccggcacctc | caacaaccac | 7260 |

RAW SEQUENCE LISTING

DATE: 08/11/2006

PATENT APPLICATION: US/10/542,958

TIME: 11:01:02

Input Set : A:\96700-1031 - from 862 seq list.ST25.txt

Output Set: N:\CRF4\08112006\J542958.raw

```

273 aacgtttag accgggctg ccagcggctc cgtctcgac gcagcgcctg ttgctgtcct 7320
275 ggctctgca gcatgcggcg gccagggccc ggtcgagcaa cccggtgacg tattgccagt 7380
277 acagccagtc cgcgacggcc acacgctgga cggccgcgct agtcgcagtg tgcgcttggg 7440
279 gcagggcaat ctctgtgtag tgggcagcgt agggccggaa cggccgcaga tgagcggcct 7500
281 cgcggccggt agcgggtgctg gtcattgggt tcatcagctc gaaccacagc atgtgccgct 7560
283 catcggccgg tggattgaca tccaccggcg ccggcggcaa caagtgcagc aaacgctgat 7620
285 cggtagtgct ggccagctga gccgcggcgg aggggtcgac gacctccagc cgcgaccggc 7680
287 ccgtcatttt gccgctctcc ggaatgtcat ctggctccag cacaatcttg gccacaccgg 7740
289 gatccgaact ggccaactgc tccgcgggtac cgatcaccgc ccgcagcgtc atgtcgtgga 7800
291 aagccgcca ggcttgacg gccaaaaccg ggtaggtggc acagcgtgca atttcgtcaa 7860
293 ccgggattgc gtgatccgcg ctggtggcca cgacgatgga accgtcgggt gtcaccgcgg 7920
295 gtatgtagag cagcccatag ctggtggcca cgacgatgga accgtcgggt gtcaccgcgg 7980
297 tgatccagaa gaaccgtag tcgcccgcgt tgttgctgga cgcgttgagc gccgcgcgca 8040
299 tgcgtcgcgc caaccgcagc gcatcaccgc ggccacgctg gcgggcgctg gcagctgcag 8100
301 tggcggcgct gcgtgcgcgc cgagccgcgg acaccgggat catcgacacc ggcgaccgt 8160
303 catctgcaga ctgcgtgcga tcgggtttgt cgatgtgatc ggtcgacggc gggcgggcag 8220
305 gaggtgccgt ccgcgcgcag gccgcgcgcg tgcctgggtg cgcgcgcttg tccgaggtag 8280
307 ccaccggcgc ccgcccagtg gcagcatgcg acccgcgcgc cgaggccgcg gccgtacca 8340
309 cgctcgaacg cgcgcgcgct cccaccggcg taccgctcgg cgcggcggcc gccgcgcgtg 8400
311 cgcgcgggac accggacgcc gcagccggcg tcaccgacgc ggcggttcg tccgcatggg 8460
313 caggccccga ctgcgtcccc ccgcccgcgt gctggcccgg cacaccaggt tgctccgcca 8520
315 acgcccgggg tttgacgtgc ggccgcgggt cgcgcccttg ggtgcccggg gttgctggac 8580
317 cagacggacc gggagtggcc ggtgtaaccg gctggggccc aggcgatggc gccggtgccg 8640
319 gagccggctg cgggtgtgga gccgggagctg gggtaaccgg cgtggccggg gttgccgggtg 8700
321 tggccggggc gaccgggggg gtgaccggcg tgatcggggt tggctcgctt ggtgtgcccg 8760
323 gtttgaccgg ggtcaccggg gtgaccggct tgcccggggt caccggcggt acgggagtgc 8820
325 cgggcgttgg tgtgatcgga gttaccggcg ctcccgggat ggggtgtgatt ggggttcccg 8880
327 ggggtgatcg ggttcccggg gtgatcgggt tcccgggtgt gccgggtgtg cccggggatg 8940
329 gcacgaccag ggtaggcacg tctgggggtg gcggcgactt ctgctgaagc aaatcctcga 9000
331 gtgcgtttct cggaggtttc caattcttgg attccagcac ccgctcagcg gtctcggcga 9060
333 ccagactgac attggcccc tgcgtcgccg tgaccaatga attgatggcg gtatggcgct 9120
335 catcagcatc caggctaggg tcattctcca ggatatcgat ctcccgttga gcgccatcca 9180
337 cattattgcc gatatcggat ttagcttgct caatcaacc ggcaatatgc ctgtgccagg 9240
339 taatcaccgt ggcgagataa tctgcagcg tcatcaattg attgatgttt gcaccaggg 9300
341 cgcggttggc agcattggcg gcgcgcgcgg accataggcc gccttcgaag acgtggcctt 9360
343 tctgctggcg gcaggtgtcc aatacatcgg tgacccttgg caaaacctgg ctatattcct 9420
345 gggcccggtc atagaaagtg tcttcatcgg ctcc 9454
348 <210> SEQ ID NO: 2
349 <211> LENGTH: 1298
350 <212> TYPE: DNA
351 <213> ORGANISM: Mycobacterium tuberculosis
353 <400> SEQUENCE: 2
354 ggtctagcag ctgcgcgcg ttttcgggca caaatgccgg atcgtggccc atgtcgatcg 60
356 gtttgttgta agcgtcgaca aacacgatcc gcggctggta tgtcgggccc cgggcgtcgt 120
358 ccactgtcgc gtacgcaatc agaatacca gatccccgg atgcaccaag tgcgcggcgg 180
360 caccgttgat gccaatcaca ccaactgccg gttcgccggt gatcgcgtag gtgaccagtc 240
362 gagcaccggt gtcgatatcg acgatgggta cctgttcgcc ttccagcagg tcggcggcgt 300
364 ccatcaagtc ggcacgatg gtcaccgagc cgacgtagtg caggtcggcg caggtcaccg 360
366 tggcgcgggt gatcttcgac ttcagcatcg tccgtaacat cagtttctcc aatgtgattc 420

```

RAW SEQUENCE LISTING

DATE: 08/11/2006

PATENT APPLICATION: US/10/542,958

TIME: 11:01:02

Input Set : A:\96700-1031 - from 862 seq list.ST25.txt

Output Set: N:\CRF4\08112006\J542958.raw

```

368 gaggattgcc cggatatcgt cggggcggtc ggtgccggcg aaagtccga tttcaatcgc 480
370 aatgttggtc agcagcctgg tgggtccaag ccgggcagca accagcagcc gaccggaacc 540
372 gttgagcggc atcggggccaa gcccgatata gcgcagctcc aggtagtcga ccgccacgcc 600
374 ggggtgcagcg tcgagcaccg cacgggcggc atccagcgcg gcctgcgcgc cagccgttgc 660
376 cgcattgcgt gcggccgtta gcgccgccga gagcgcgacg gccgccgcac gctgggcccgg 720
378 gtccaggtag cggttgcgcg acgacatcgc cagcccgtcg gcttcgcgca cggtcggcac 780
380 gccgaccacc gcgacatcga ggttgaagtc cgcgaccagc tgccggatca gcaccagctg 840
382 ctggtagtcc ttctcaccga agaacacccg atccgggcgc acgatctgca gcagctttag 900
384 cagcaccgtc agcagcccg cgaatgggt tggccgcggg ccgccctcga gttcggcggc 960
386 caacggaccg ggttgacgg tgggtgcgag gccgtcggga tacatcgccg cggtagttgg 1020
388 cgtgaaagcg atttccacgc cttcggcccc cagttgcgcc aggtcgctgt ccgggggtgcg 1080
390 gggataggcg tcgagatctt ccccgccacc gaattgcacg gggttgacga agatcgacac 1140
392 gcgacgacc gatccgggca cccgcttggc cgcacgcacc aacgcgaggt ggccttcgtg 1200
394 cagcgcaccc atagtaggca ccaacatcac tcgccggccg gtgagtcgca gtgcgcgact 1260
396 gacatcgccg acatcccccg gtgccgagta cacattga 1298
399 <210> SEQ ID NO: 3
400 <211> LENGTH: 771
401 <212> TYPE: DNA
402 <213> ORGANISM: Mycobacterium tuberculosis
404 <400> SEQUENCE: 3
405 aacggggcgat gagccgggac gcgtcgatgt accgcgccgc cgcggggctg caccggctgt 60
407 gcgacagcct atccggagca caggttcgcg acgtggcttg tcgccgcgat ttcgaggacg 120
409 tggcgctcac gctggtcgcg cagagcgtga ccgccgccgc cttggccccg accgaaagcc 180
411 gtggctgcca tcatcgcgcg gagtaccgct gcaccgtgcc ggagcaggca cgcagcatcg 240
413 tgggtccggg agccgacgac gcaaatgcgg tgtgtgtcca ggcgctagtg gcggtgtgct 300
415 gatgggggta tccgactggg agctggctgc ggctcgagca gcaatcgcgc gtgggctcga 360
417 cgaggacctc cggtagcgcc cggatgtcac cacattggcg acggtgcctg ccagtgcgac 420
419 gaccacgcca tcgctgggtg cccgggagga cgggttggtt gccggattgg atgtcgcgct 480
421 gctgacgctg aacgaagtc tgggcaccaa cggttatcgg gtgctcgacc gcgtcgagga 540
423 cggcgccccg gtgccgccgg gagaggcact tatgacgctg gaagcccaa cgcgcggatt 600
425 gttgaccgcc gagegcacca tgttgaacct ggtcggtcac ctgtcgggaa tcgccaccgc 660
427 gacggccgcg tgggtcgatg ctgtgcgcgg gaccaaagcg aaaatccgcg ataccgtaa 720
429 gacgctgccc ggctgcgcg cgtcgcaaaa atacgcggtg cgtaccggtg g 771
432 <210> SEQ ID NO: 4
433 <211> LENGTH: 1255
434 <212> TYPE: DNA
435 <213> ORGANISM: Mycobacterium tuberculosis
437 <400> SEQUENCE: 4
438 gtgaacgagc tgctgcactt agcgcgaat gtgtggccgc gcaatactac tcgcgatgaa 60
440 gtcggtgtgg tctgcatcgc aggaattcca ctgacgcagc tcgccaggga gtacgggacc 120
442 ccgctgttcg tcatcgacga ggacgacttt cgctcgcgct gccgagaaac cgcgcgggcc 180
444 tttggaagtg gggcgaacgt gcactatgcc gccaaaggct tctgtgtag cgaagtagcc 240
446 cgggtgatca gcgaagaagg gctctgtctg gacgtttgca ccggtgggga gttggcggtc 300
448 gcgctgcacg ctgactttcc gccgcgga attacctgac acggcaacaa caaatcggtc 360
450 tcagagttga ccgctgcggt caaagccgga gtcgccata ttgtcgtcga ttcgatgacc 420
452 gagatcgagc gcctcgacgc catcgccggc gaggccggaa tcgtccagga tgtcctggtg 480
454 cgtctcaccg tcggtgtcga ggcgcacacc cagagttca tctccaccgc gcacgagacg 540
456 cgtcagccac atcggttcgc agatcttcga cgtggacggc ttcgaactcg ccgcgcaccg 600
458 tgtcatcggc ctgctacgcg acgtcgtcgg cgagttcggt cccgaaaaga cggcacagat 660

```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 08/11/2006
PATENT APPLICATION: US/10/542,958 TIME: 11:01:03

Input Set : A:\96700-1031 - from 862 seq list.ST25.txt
Output Set: N:\CRF4\08112006\J542958.raw

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete,
per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:5,6,7,8,9,10,11,12

VERIFICATION SUMMARY

DATE: 08/11/2006

PATENT APPLICATION: US/10/542,958

TIME: 11:01:03

Input Set : A:\96700-1031 - from 862 seq list.ST25.txt

Output Set: N:\CRF4\08112006\J542958.raw

L:15 M:270 C: Current Application Number differs, Replaced Current Application Number

L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date